NEW JERSEY ADULT MOSQUITO SURVEILLANCE Report

August 29 to September 4, CDC Week 35

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Center for Vector Biology

This New Jersey Agricultural Experiment Station report is supported by Rutgers University, Hatch funds,
funding from the NJ State Mosquito Control Commission and with the participation of the 21 county mosquito control agencies of New Jersey.

Summary Table – Week 35

	Aedes vexans			***Culex* Mix**			***Coquillettidia perturbans***			***Aedes sollicitans***		
Region	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase	This Week	Average*	Increase
Agricultural	**0.52**	**4.46**	**0**	**11.52**	**26.33**	**0**	**0.00**	**0.27**	**0**	**0.00**	**1.17**	**0**
Coastal	**0.21**	**3.80**	**0**	**0.32**	**6.22**	**0**	**0.00**	**0.04**	**0**	**0.17**	**2.32**	**0**
Delaware Bayshore	**0.00**	**0.88**	**0**	**0.00**	**13.63**	**0**	**0.00**	**0.49**	**0**	**0.00**	**1.46**	**0**
Delaware River Basin	**6.00**	**13.33**	**0**	**41.57**	**17.07**	**3**	**0.29**	**0.76**	**0**	**0.29**	**0.00**	
New York Metro	**0.51**	**2.58**	**0**	**2.67**	**9.82**	**0**	**0.07**	**0.29**	**0**	**0.00**	**0.30**	**0**
North Central Rural	**0.55**	**0.59**	**0**	**0.29**	**0.72**	**0**	**0.20**	**0.02**	**4**	**0.00**	**0.00**	**0**
Northwest Rural	**0.00**	**11.37**	**0**	**0.00**	**10.25**	**0**	**0.00**	**0.12**	**0**	**0.00**	**0.00**	**0**
Philadelphia Metro	**0.00**	**6.76**	**0**	**0.00**	**1.93**	**0**	**0.00**	**0.35**	**0**	**0.00**	**0.00**	**0**
Pinelands	**0.18**	**1.47**	**0**	**0.53**	**4.13**	**0**	**0.00**	**0.58**	**0**	**0.00**	**1.24**	**0**
Suburban Corridor	**0.64**	**2.47**	**0**	**0.43**	**1.26**	**0**	**0.08**	**0.06**	**1**	**0.00**	**0.01**	**0**

*Averages represent data from, at most, the previous 5 years. Increase is a scale of current values from historical values where no difference or a decrease is represented by 0 (blue), up to 50% greater difference by 1 (green), up to 100% greater difference by 2 (yellow), up to 150% greater difference by 3 (orange) and greater than 150% increase by 4 (red). White cells in the increase column denote increases from an historic zero and thus no value can be appropriately given. nd=no data reported.

State Summary: Mosquito populations continue to be either at or below historical averages or are under-reported (national holiday on data download). For *Culex* Mix, the Delaware River Basin population was above average, continuing a trend of recent higher activity. *Coquillettidia perturbans* continued to show significant numbers in the North Central Rural, continuing a trend of recent higher numbers albeit in low absolute terms. Minor elevations were also observed in the Suburban Corridor for this mid-season species. No notably higher numbers for *Aedes vexans* or *Aedes sollicitans* were observed, apart from a number reported for the Delaware River Basin in *Aedes sollicitans* above a historical value of zero.

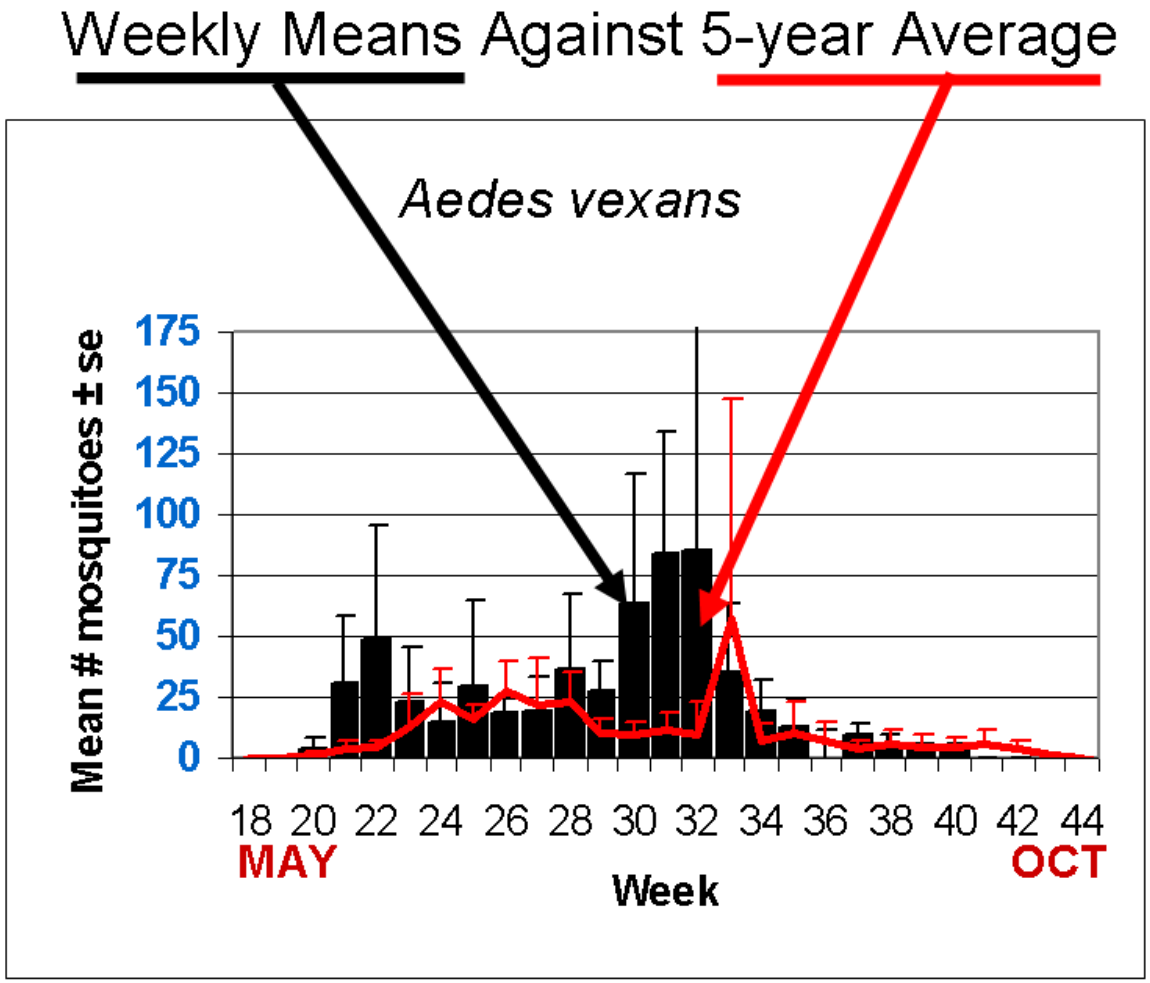
Climate Factors

Average High Temperature	Average Low Temperature	Total Precipitation
na	na	na

The three figures show the interpolation of average maximum (°F) and minimum temperature (°F) and total precipitation (inches) for 14 days prior to date 2021 in New Jersey. Data points are from about 45 weather stations maintained through the New Jersey Weather & Climate Network and the State Climatologist. Interpolation between points was performed using ArcMap 10.1.

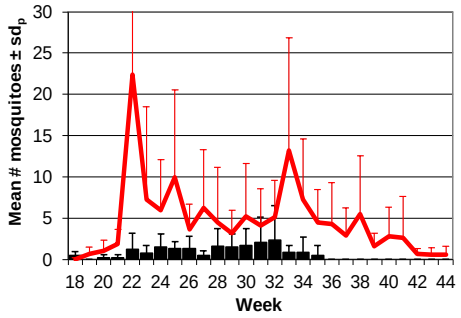
ONJSC at Rutgers University NJ Weather & Climate NETWORK

The Species Graphs: The species graph pages include a graph with two plots for each of the ten regions defined on the first page (Agricultural, Coastal, Delaware Bayshore, Delaware River, New York Metro, North-Central, Northwestern, Philadelphia Metro, Pinelands, and Suburban Corridor). Below is an example of one graph from one species within one region. The bar plot show the average number of mosquitoes per trap within the region (weekly means) and line plots show the historical trend as the average number of mosquitoes from the previous 5 years (5-year average). In general, historical data are running means from the previous 5 years, but on occasion, will include data from fewer years. Adjustments are made to account for year discrepancies. Data for this week are from Atlantic, Hudson, Mercer, Morris, Salem, and Union counties. Data for the previous week are from Atlantic, Bergen, Cape May, Hudson, Mercer, Middlesex, Morris, Ocean, Passaic, Salem, Somerset, Sussex, and Union counties.

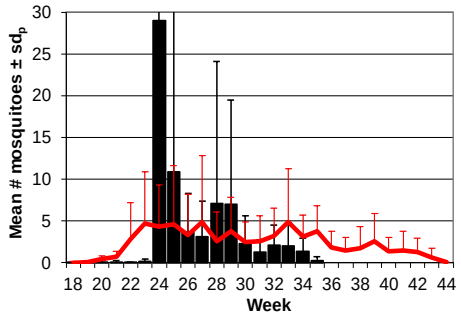


Aedes vexans - Fresh Floodwater Species
Multivoltine Aedine (*Ae. vexans* Type)

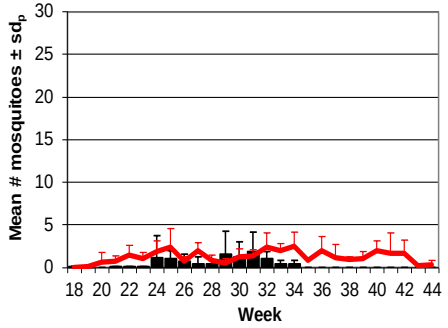
Agricultural



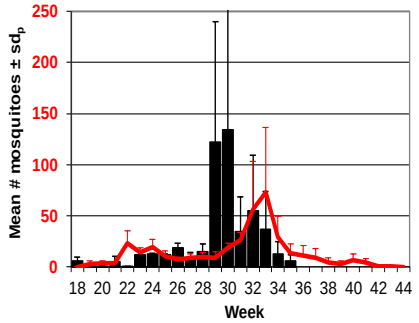
Coastal



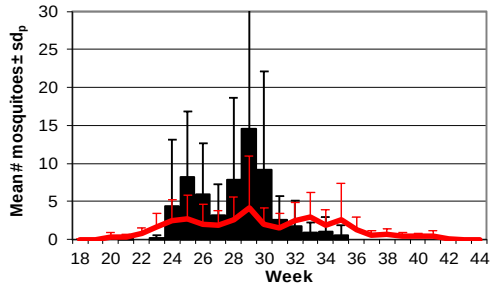
Delaware Bayshore



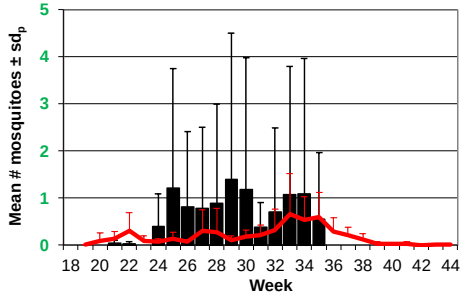
Delaware River Basin



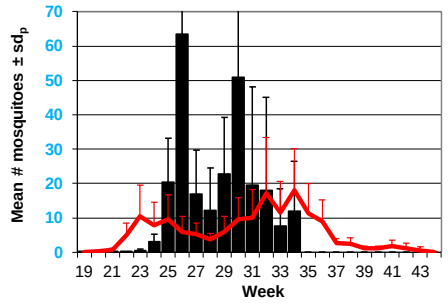
New York Metro



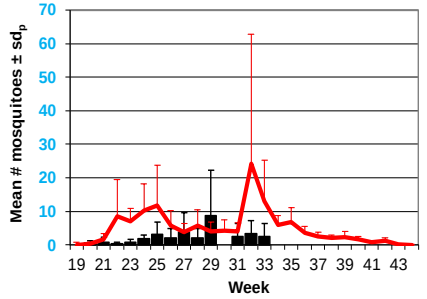
North Central Rural



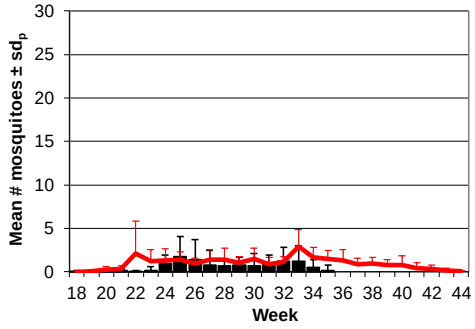
Northwestern Rural



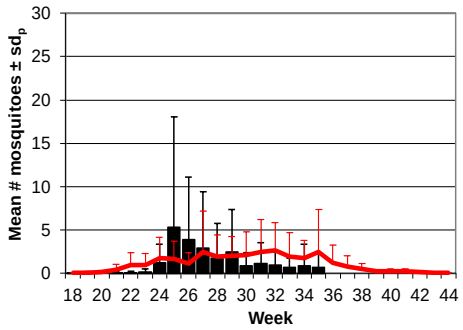
Philadelphia Metro



Pinelands



Suburban Corridor



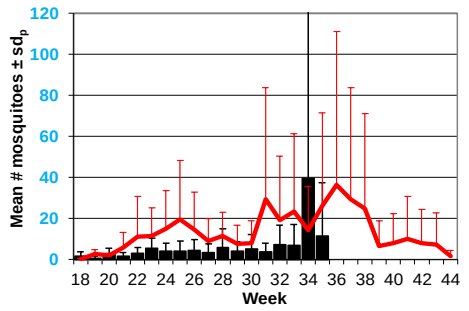
Comments

Aedes vexans is the model for fresh floodwater species. With abundant precipitation, this species can emerge in very significant numbers. *Aedes vexans* populations continued the trend of being at or below historical averages for the current week. Heavy rainfall and flooding affected the state as the remnants of Hurricane Ida pass through.

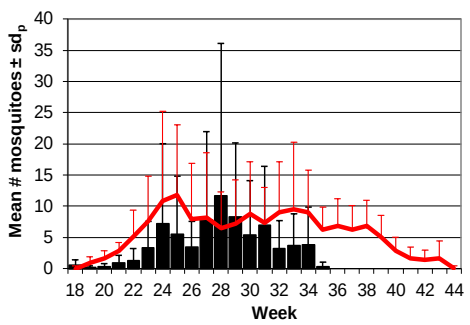
https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?NJ

Culex Mix – Permanent Water Species
Multivoltine *Culex*/*Anopheles* (*Cx. pipiens* Type)

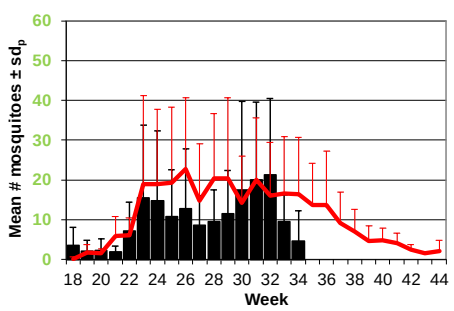
Agricultural



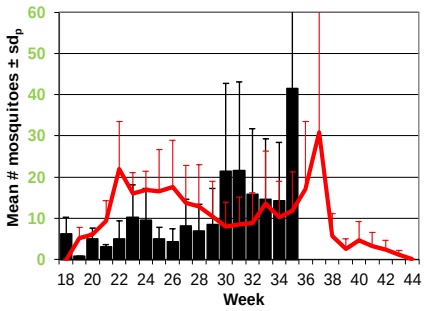
Coastal



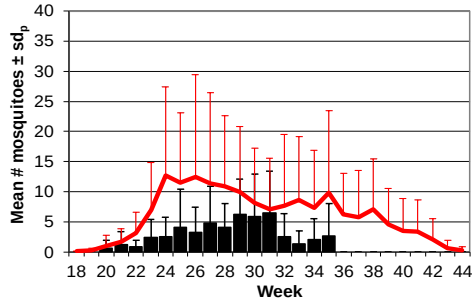
Delaware Bayshore



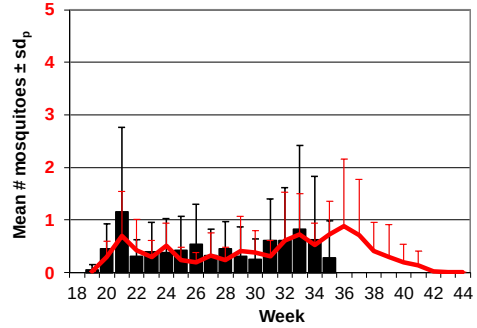
Delaware River Basin



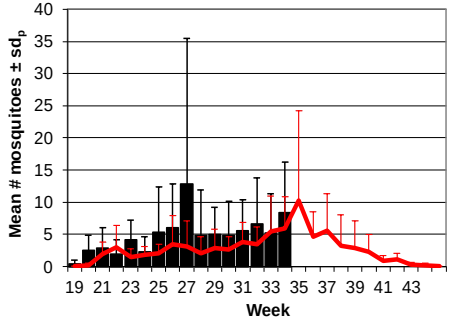
New York Metro



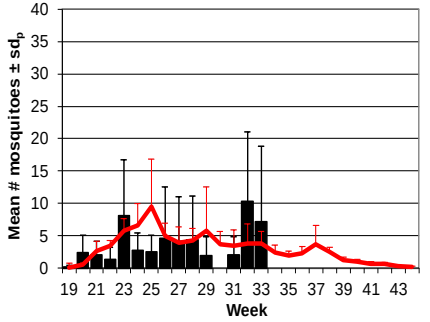
North Central Rural



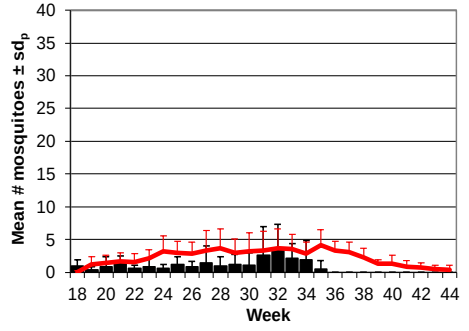
Northwestern Rural



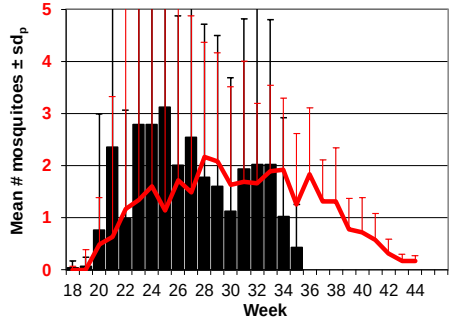
Philadelphia Metro



Pinelands



Suburban Corridor



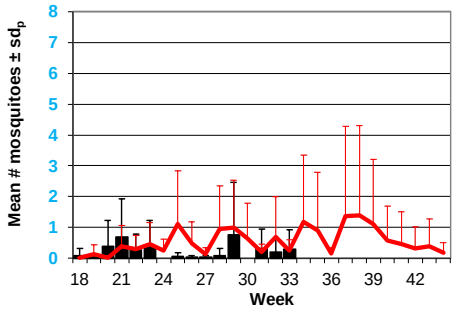
Comments

Culex Mix is composed of *Culex pipiens, Cx. restuans* and *Cx. salinarius*. These three species (especially *pipiens* and *restuans*) are often difficult to tell apart after encountering the damaging blades of the New Jersey light trap. For *Culex* Mix, the Delaware River Basin population was above average, continuing a trend of recent higher activity.

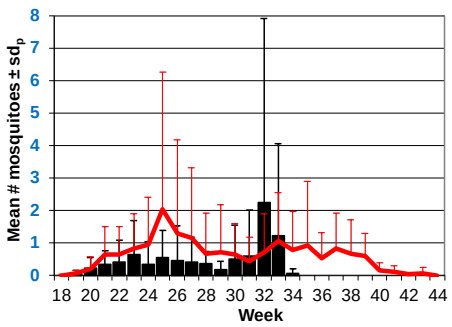
WNV activity continues to be active throughout the state, with most positive pools in *Culex* species.

Culiseta melanura – Miscellaneous Group Unique (*Cs. melanura* Type)

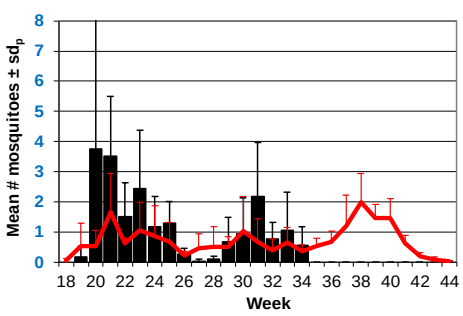
Agricultural



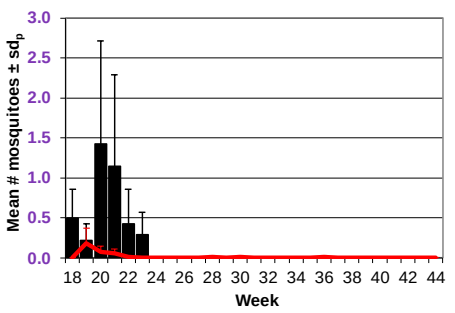
Coastal



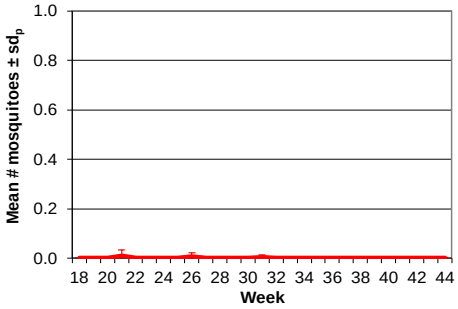
Delaware Bayshore



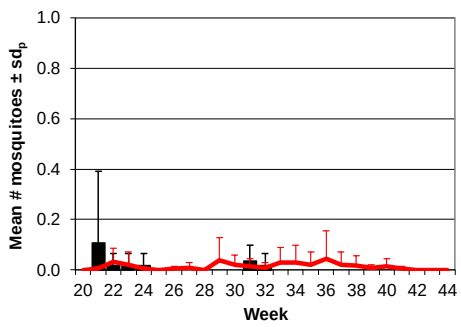
Delaware River Basin



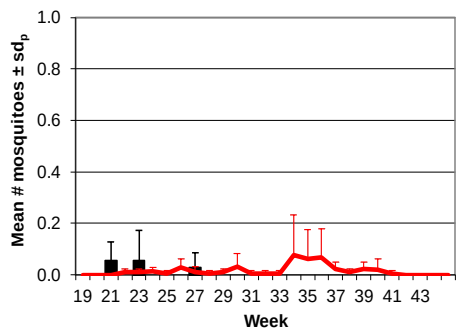
New York Metro



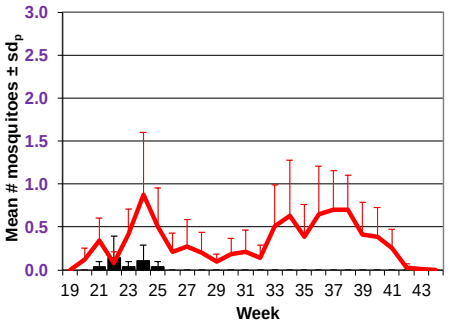
North Central Rural



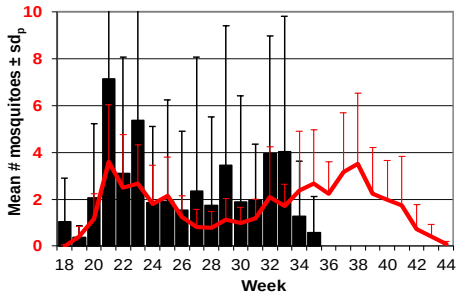
Northwestern Rural



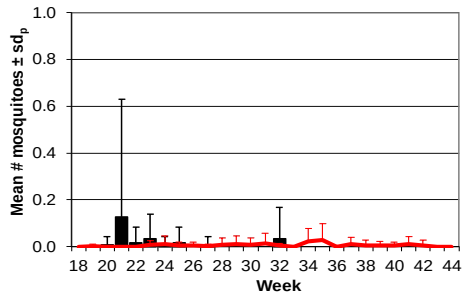
Philadelphia Metro



Pinelands



Suburban Corridor



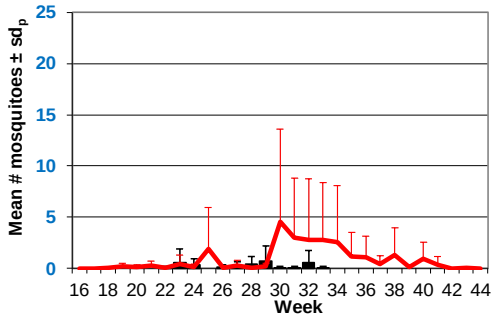
Comments

Culiseta melanura is the enzootic ornithophilic vector of eastern equine encephalitis. This cold-hearty species can emerge early in the season as well as staying active later. Although populations in the Pinelands appear to be waning, some data from critical areas are yet to be reported, and trends may actually be higher than at first glance.

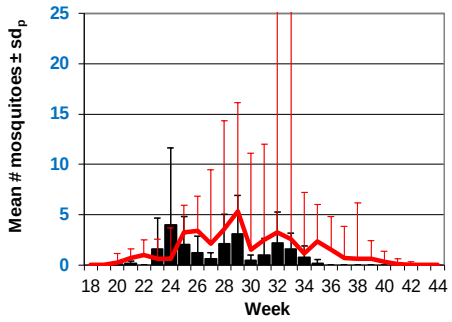
EEE activity has been significant in Florida. All horse owners should make sure their horses are up to date on their EEE/WNV vaccination schedules: **http://www.aaep.org/custdocs/adultvaccinationchart.pdf**

Aedes sollicitans - Salt Floodwater Species
Multivoltine Aedine (*Ae. sollicitans* Type)

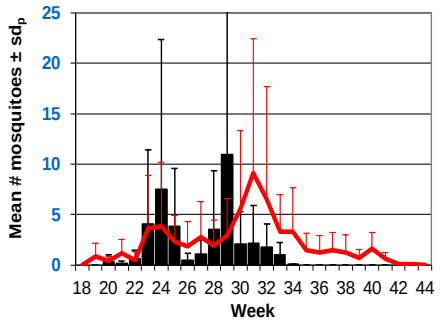
Agricultural



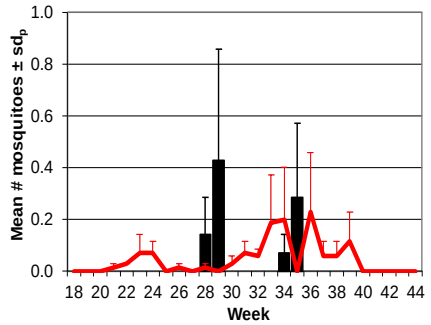
Coastal



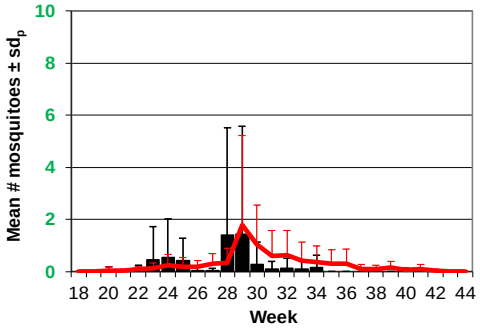
Delaware Bayshore



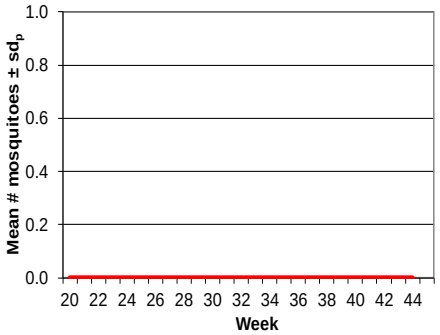
Delaware River Basin



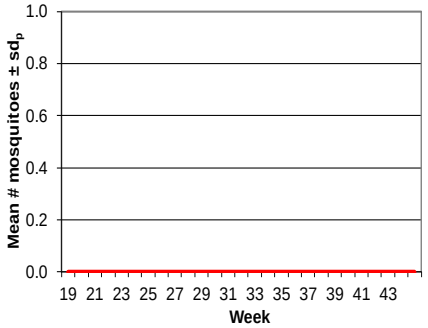
New York Metro



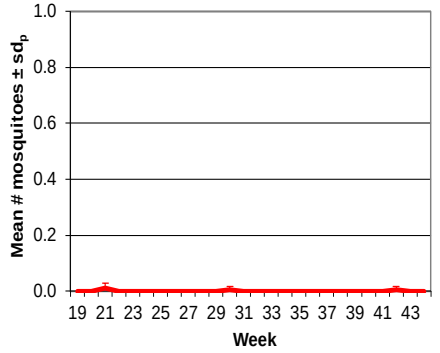
North Central Rural



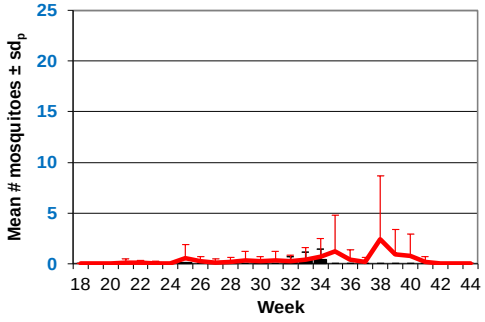
Northwestern Rural



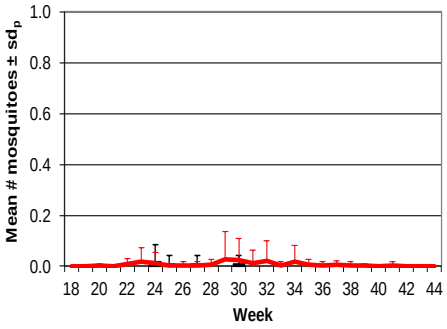
Philadelphia Metro



Pinelands



Suburban Corridor



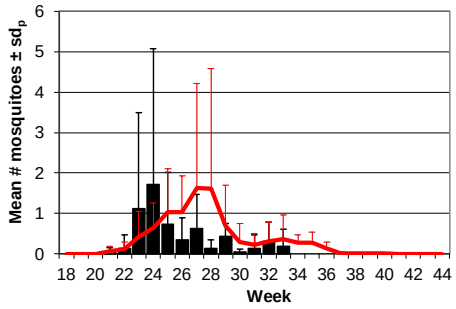
Comments

Aedes sollicitans is a salt floodwater species and responds to both lunar tidal patterns as well as rainfall. As with last week, no populations were above historical values, apart from a population number reported in the Delaware River Basin above a historical zero.

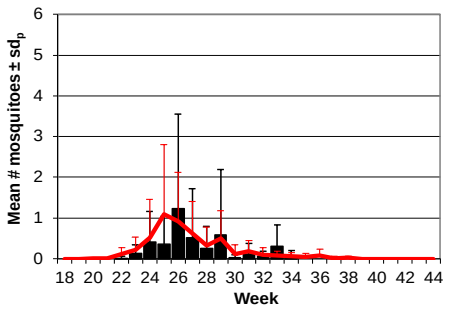
Next full moon on 20 September.
Salt line on the Delaware River is within expected values along the Basin region:
https://www.nj.gov/drbc/programs/flow/salt-front.html

Coquillettidia perturbans
Monotypic (*Coquillettidia perturbans* Type)

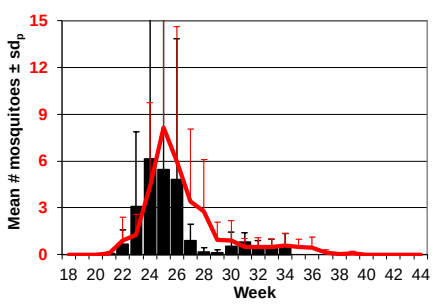
Agricultural



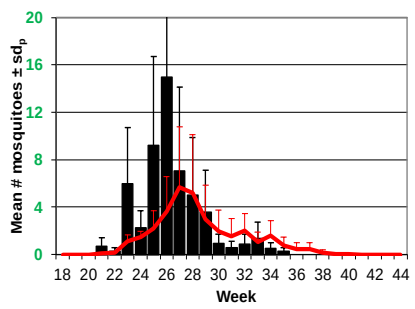
Coastal



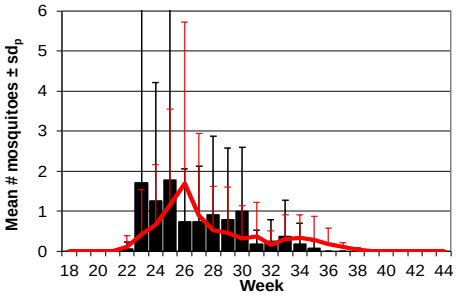
Delaware Bayshore



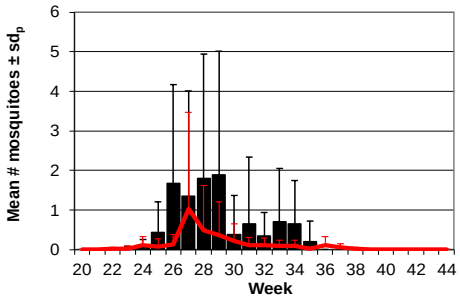
Delaware River Basin



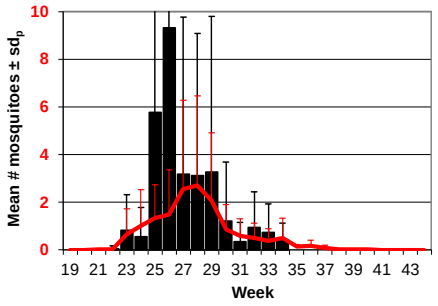
New York Metro



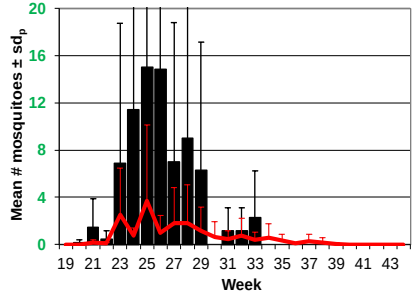
North Central Rural



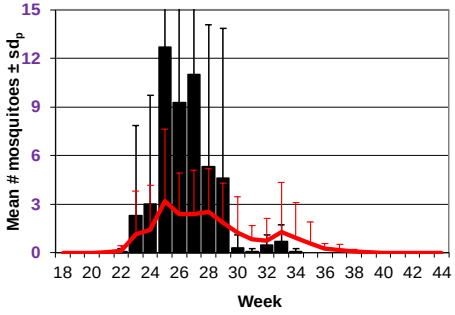
Northwestern Rural



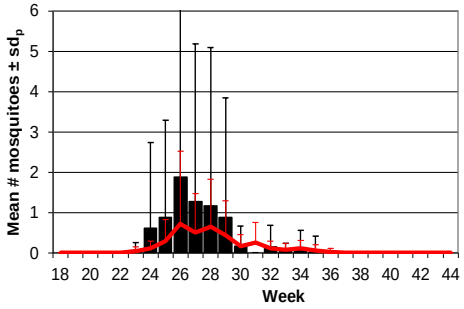
Philadelphia Metro



Pinelands



Suburban Corridor



Comments

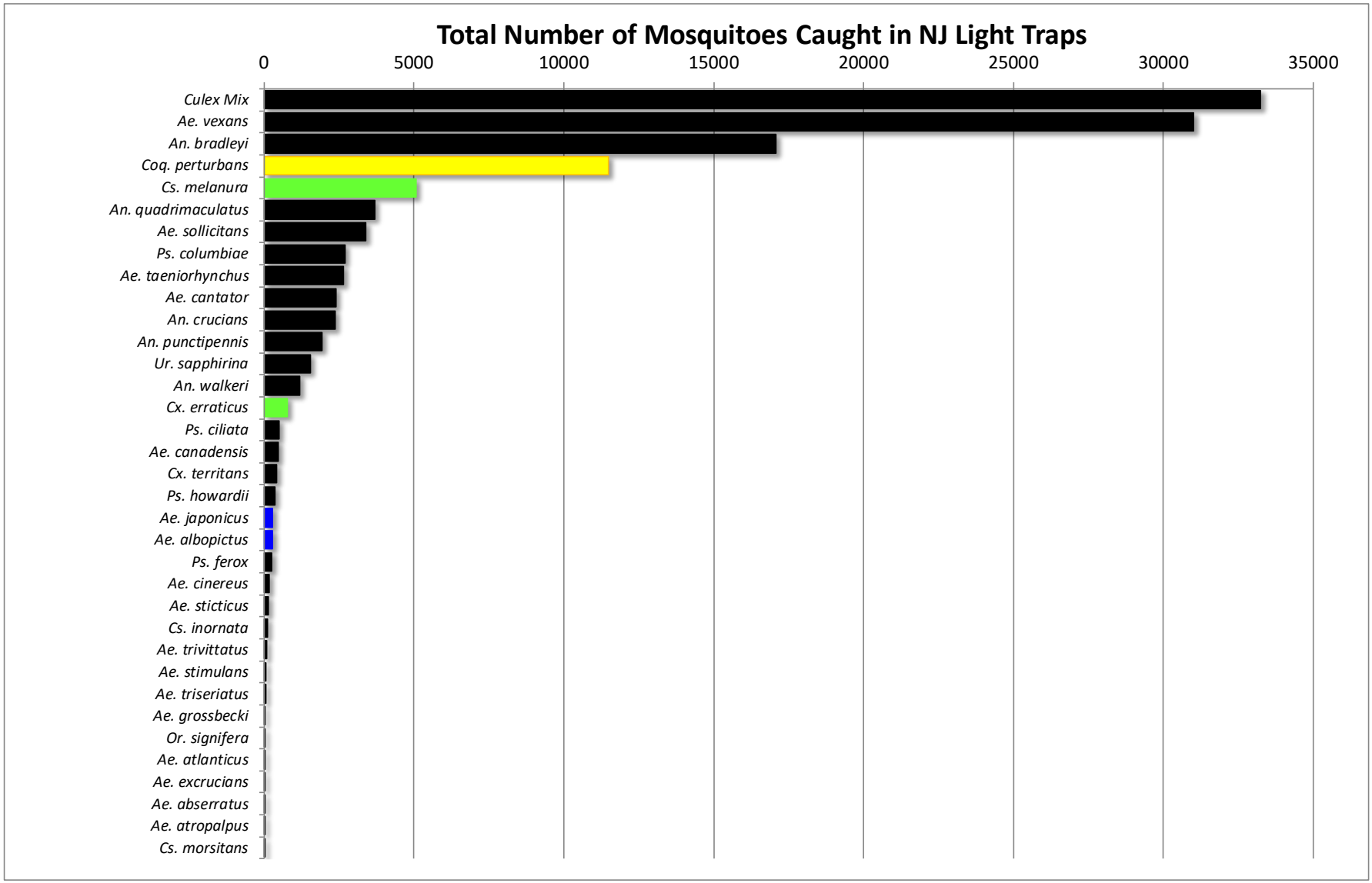
Coquillettidia perturbans populations are located in cattail swamps and other wetlands with emergent vegetation, often making control of their numbers dependent on controlling water depth. *Coquillettidia perturbans* continued to show significant numbers in the North Central Rural, continuing a trend of recent higher numbers albeit in low absolute terms. Minor elevations were also observed in the Suburban Corridor for this mid-season species.

EEE has been detected in the state and as such, due diligence should be taken with the monitoring of the endemic vector (*Cs. melanura*) and this bridge vector (*Coq. perturbans*).

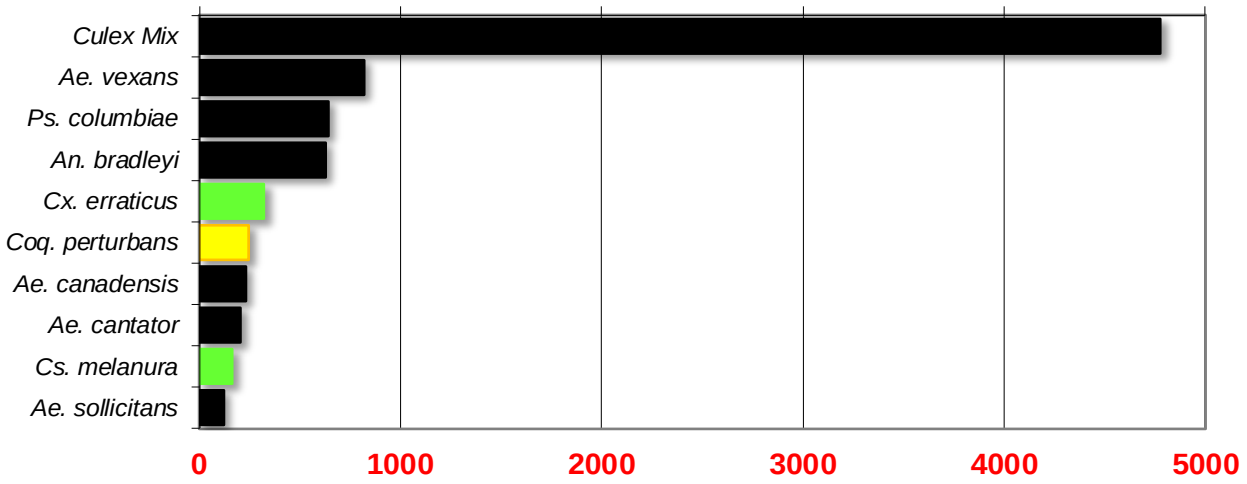
WNV *EEE*

Top Ten Mosquito Species/Region - *Ae. albopictus,* *Ae. japonicus (invasives);* *Cs. melanura or Cx. erraticus* *Coq. perturbans*

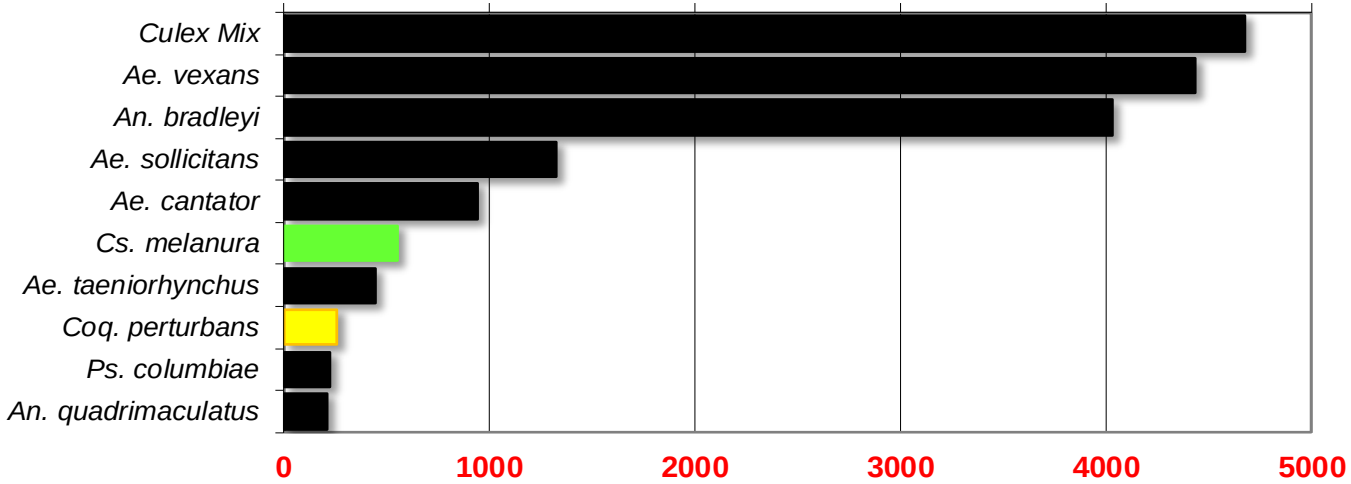
Note: In early season when fewer species are caught, graphs may show less than ten species/region or 25 statewide.

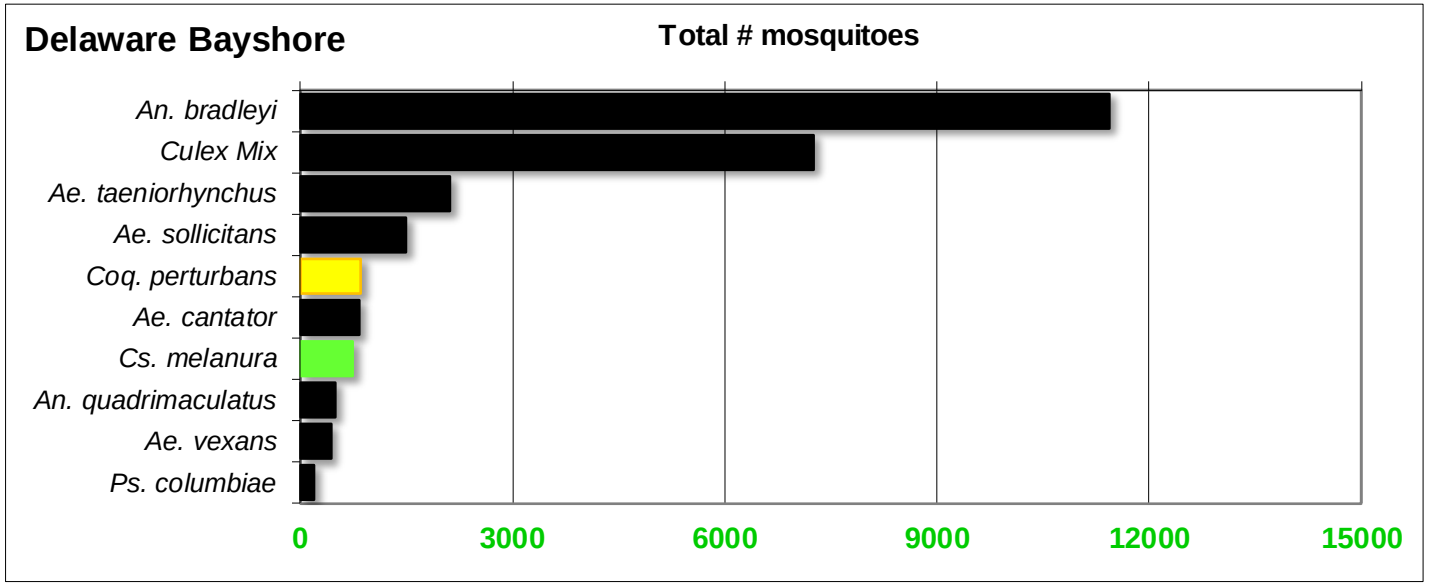


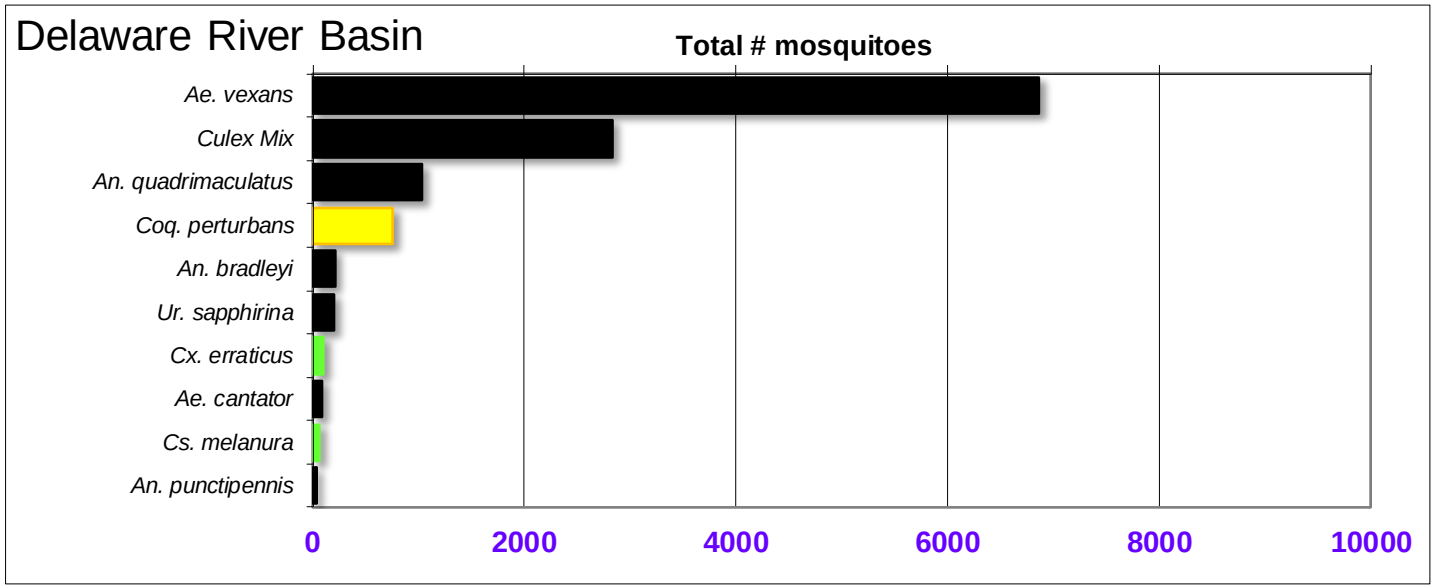
Agricultural

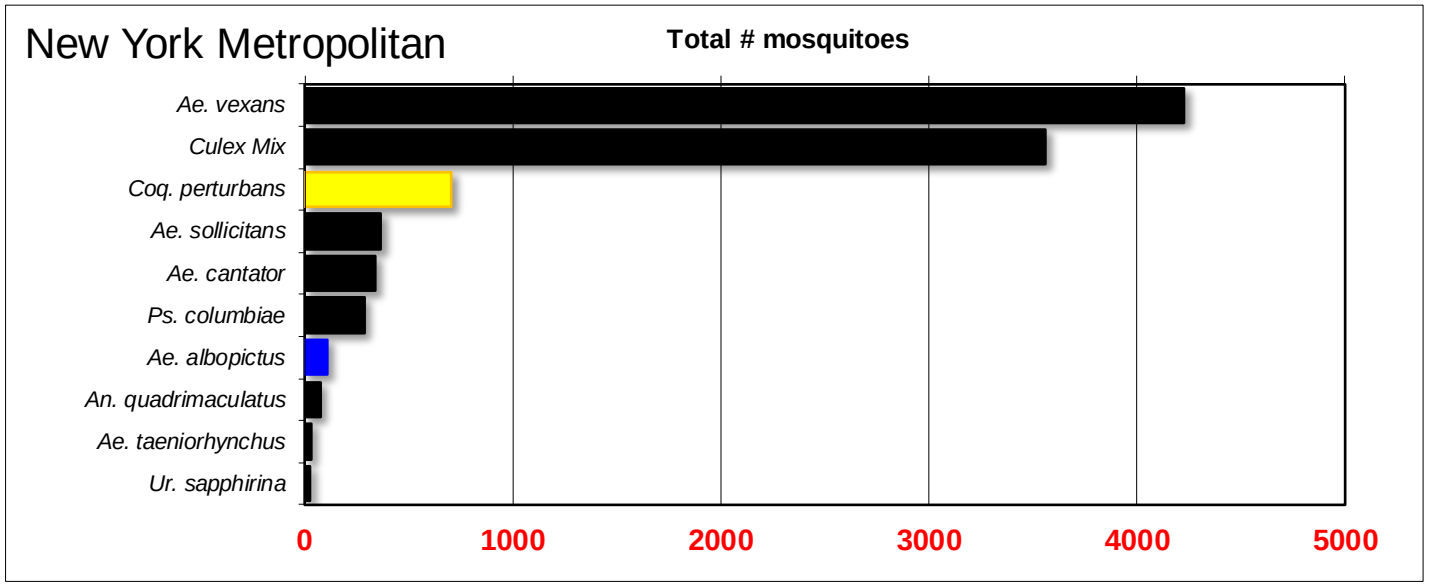


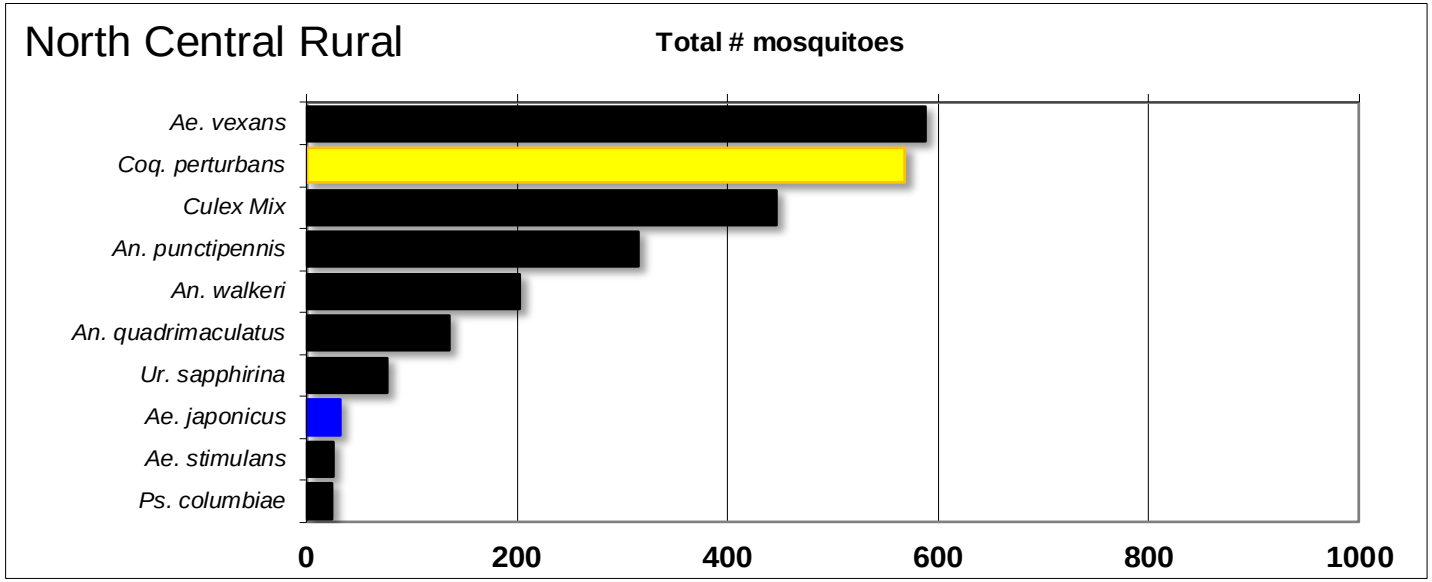
Coastal



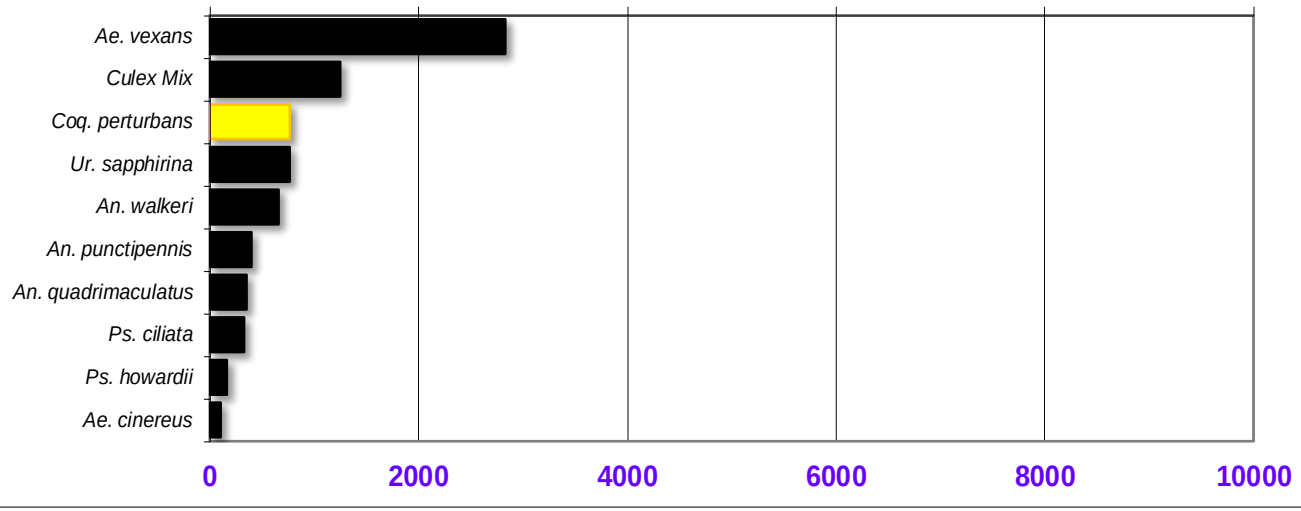

Delaware Bayshore
Total # mosquitoes
An. bradleyi
Culex Mix
Ae. taeniorhynchus
Ae. sollicitans
Coq. perturbans
Ae. cantator
Cs. melanura
An. quadrimaculatus
Ae. vexans
Ps. columbiae
0
3000
6000
9000
12000
15000


Delaware River Basin
Total # mosquitoes
Ae. vexans
Culex Mix
An. quadrimaculatus
Coq. perturbans
An. bradleyi
Ur. sapphirina
Cx. erraticus
Ae. cantator
Cs. melanura
An. punctipennis
0
2000
4000
6000
8000
10000

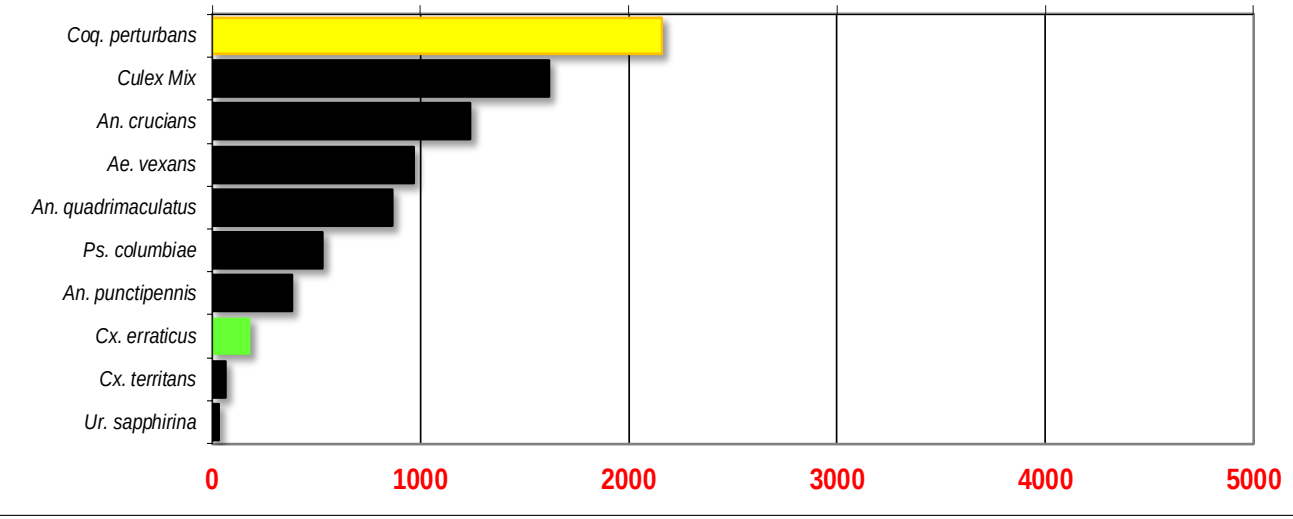

New York Metropolitan
Total # mosquitoes
Ae. vexans
Culex Mix
Coq. perturbans
Ae. sollicitans
Ae. cantator
Ps. columbiae
Ae. albopictus
An. quadrimaculatus
Ae. taeniorhynchus
Ur. sapphirina
0
1000
2000
3000
4000
5000

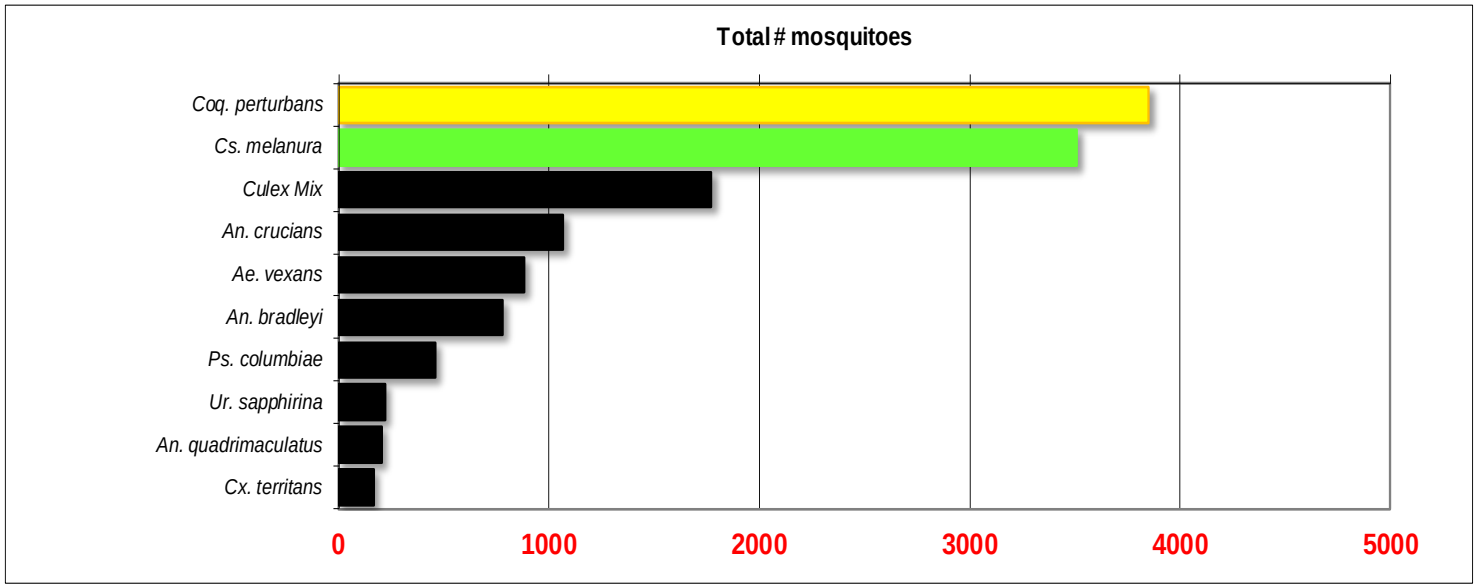

North Central Rural
Total # mosquitoes
Ae. vexans
Coq. perturbans
Culex Mix
An. punctipennis
An. walkeri
An. quadrimaculatus
Ur. sapphirina
Ae. japonicus
Ae. stimulans
Ps. columbiae
0
200
400
600
800
1000

Northwest Rural



Philadelphia Metropolitan





Suburban Corridor